

# Determinants Influencing Consumers' Attitude Towards Online Shopping: An Extension of the Technology Acceptance Model

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## Abstract

This research is conducted for investigating determinants influencing consumers' attitude towards online shopping. The survey was based on 423 Vietnamese Internet users. Data collected was analyzed in accordance with the process from Cronbach's Alpha to EFA and multiple regression technique. The results show that consumers' attitude towards online shopping was impacted by perceived usefulness, compatibility and trust. Based on the findings, some recommendations are given for retailers to improve customers' attitude toward online shopping in the context of Vietnam in particular and in emerging countries in general.

**Keywords:** Attitude, Online shopping, Perceived usefulness, Trust.

## 1. Introduction

Nowadays, online shopping has become a popular purchase method and is growing day by day throughout the world (Wu et al., 2011). This is proved by the growing number of online shopper as well as increasing revenue from online retail business (Ozen & Enginek, 2014). However, the percentage of Vietnamese consumer participating in online shopping is still much lower than other countries in the same region and the world (Ministry of Industry and Trade, 2015). Thus, in order to attract consumer to online shopping method, it is believed that identification of factors impact consumer attitude towards online shopping is essential for online retailers. This is because attitude is a factor that directly impact consumer behavior (Davis, 1985). In the context of online shopping, consumers' attitude is proved to carry direct impact on online shopping percentage (Wu, 2003).

Across the globe, research about factors influencing consumer attitude towards online shopping has been conducted by many (Source et al., 2005; Wu, 2003). Nevertheless, within the context of Vietnam, such investigation has rather been limited. Those that exist mostly focused on factors that impact consumer online shopping intention (Ha & Nguyen, 2017; Duong, 2012; Lee & Ngoc, 2010) or consumer online shopping behavior (Khanh, 2014). There is a research on factors influencing consumer attitude towards online shopping in Vietnam (Nguyen & Nguyen, 2016). However, this research is limited in the fact that the authors only considered risk and sellers' return policy as influencing determinants. Moreover, online shopping in Vietnam is within its starting period thus both infrastructure and related legal framework are still incomplete. Therefore, differences between influencing determinants may existed between different research contexts. Given the above findings, it is believed that the study of factors influencing consumer attitude towards online shopping in the context of Vietnam is valuable in terms of both academic and practice.

According to Technology Acceptance Model (TAM), consumer attitude is impacted by "perceived usefulness" and "perceived ease of use" (Davis, 1985). Base on Diffusion of Innovations Theory by Rogers (1995), Taylor & Todd (1995) also agreed with Davis (1985) that consumers' attitude is also impacted by "compatibility" which is the degree the innovation fits with the potential adopter's existing values, previous experiences and current needs.

Moreover, some authors argued that customers' attitude towards online shopping also affected by their trust of the seller (Hsu et al., 2014; Kim, 2012; Zarmou et al., 2012; Delafrooz et al., 2011; Ling et al., 2010; Ha & Stoel, 2009; Chen & Tan, 2004; Suh & Han, 2003). For example, Jarvenpaa et al. (2000) pointed out that trust carries a significant impact to consumers' attitude towards online shopping in many different cultures. Suh & Han (2003) combined trust into TAM and found similar results like Jarvenpaa et al. (2000), trust is an important factor that influences attitude toward online shopping. Or Pavlou & Fygenson (2006) in a research that use Theory of Planned Behavior (TPB) found out that trust has a direct impact to consumers' attitude.

In the context of online shopping, trust plays an important role since within virtual environment, consumer perceived risk of transactions is always higher given they do not directly interact with seller and the underlying product that they are about to buy (Verhagen et al., 2006; Pavlou, 2003; Jarvenpaa et al., 2000). Risks that consumer may face when conducting online shopping include financial and product risks (Bhatnagar et al., 2000). Some research showed that consumers' attitude towards online shopping is also impacted by risk (Hsu et al., 2014; Jarvenpaa et al., 2000).

With regards to the above findings, this paper will combine the factor of trust and perceived risk into TAM in order to study Vietnamese consumers' attitude towards online shopping.

## 2. Literature Review and Hypotheses

Attitude toward the behavior and refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question (Ajzen, 1991). In the context of online shopping, attitude refers to general consumer feelings of favorableness or unfavourableness towards the use of online shopping (Lin, 2007). There is evidence that consumers' attitude towards online shopping bears a significant impact from perceived usefulness and perceived ease of use (Gefen et al., 2003; Pavlou, 2003); compatibility (Lin, 2007); trust and perceived risk (Hsu et al., 2014; Jarvenpaa et al., 2000).

Perceived usefulness is understood as the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989). Within the context of online shopping, perceived usefulness refers to "the degree to which an individual believes that trading on the Web would enhance the effectiveness of his or her shopping" (Shih, 2004, 354). There is concrete evidence that perceive usefulness makes a positive impact to consumers' attitude towards online shopping (Hernandez et al., 2010; Ha & Stoel, 2009; Barkhi et al., 2008; Pavlou & Fygenson, 2006; Chen & Tan, 2004; Vijayasarathy, 2004; Suh & Han, 2003). Therefore, proposed hypothesis is:

*H1: Perceived usefulness has a positive impact to attitude towards online shopping.*

Perceived ease of use refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, 320). Within the context of online shopping, perceived ease of use can be defined as a level in which consumer believes that they do not need to give effort when conducting their shopping online (Lin, 2007). Perceived ease of use has been proved to carry a significant impact to consumer attitude toward online shopping (Hernandez et al., 2010; Ha & Stoel, 2009; Barkhi et al., 2008; Pavlou & Fygenson, 2006; Chen & Tan, 2004; Vijayasarathy, 2004; Suh & Han, 2003). Therefore, proposed hypothesis is:

*H2: Perceived ease of use has a positive impact to consumers' attitude towards online shopping.*

Compatibility is the degree to which the innovation fits with the potential adopter existing values, previous experiences and current needs (Rogers, 1995). In the context of online shopping, compatibility is evaluated by the comparison of compatible level between consumer needs, value and lifestyle with online shopping (Verhoef & Langerak, 2001). Many previous studies support the view that compatibility of online shopping carries a positive impact to consumers' attitude toward online shopping (Lin, 2007; Chen & Tan, 2004). Therefore, proposed hypothesis is:

*H3: Compatibility has a positive impact to consumers' attitude towards online shopping.*

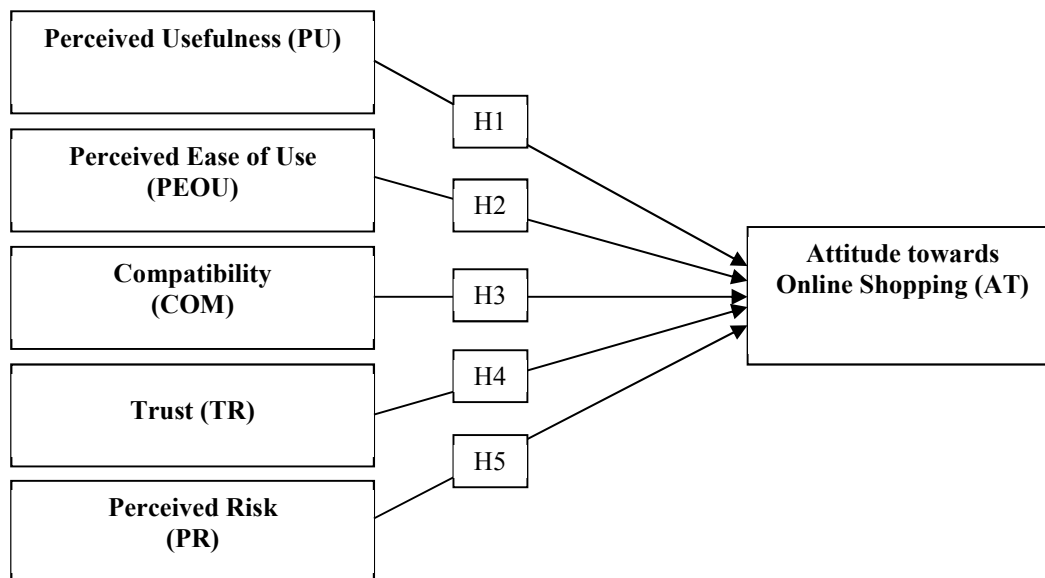
Trust is understood as the expectation that other individuals or companies with whom one interacts will not take undue advantage of a dependence upon them (Gefen et al., 2003). It is the belief that the trusted party will behave in an ethical (Hosmer, 1995), dependable (Kumar et al., 1995), and socially appropriate manner (Zucker, 1986) and will fulfill their expected commitments (Rotter, 1971) in conditions of interdependence and potential vulnerability (Rousseau et al., 1998). In online shopping context, trust is the willingness to accept unfavorable condition possibility to conduct shopping transaction with online selling companies with the expectation that they will act according to what best for consumer basic (Lee & Turban, 2001). Result of previous studies showed that consumer trust in shops has an impact to their attitude towards such shops (Macintosh & Lockshin, 1997). The higher the trust of buyer in seller, the better the impact to his/her attitude (Schurr & Ozanne, 1985). This belief is highly supported in online shopping context. Some research had shown that trust has a positive relationship with consumer attitude toward a virtual shop (Hsu et al., 2014; Jarvenpaa et al., 2000). Therefore, proposed hypothesis is:

*H4: Trust has a positive impact to attitude towards online shopping.*

Perception of risk involves the trustor's belief about likelihoods of gains or losses outside of considerations that involve the relationship with the particular trustee (Mayer et al., 1995). The uncertainty involved with online transactions creates many different risks which Pavlou (2003) has classified into: financial risk, seller risk, privacy risk (private information may be released illegally) and security risk (credit card information theft). In the context of online shopping, perceived risk of customer has a negative relationship with their attitude towards a virtual store (Hsu et al., 2014; Jarvenpaa et al., 2000). Therefore, proposed hypothesis is:

*H5: Perceived risk has a negative impact to consumers' attitude towards online shopping.*

From the above literature review, a research model is proposed as below:



**Figure 1: Research Model**

### 3. Research Methodology

#### 3.1. Survey Design

Questionnaire is built base on literature review and is corrected to better suit Vietnamese research context. Scales are inherited from previous studies. “Attitude” is measured by scale from Pavlou & Fygenson (2006) research. “Trust” is measured by scales from Jarvenpaa et al. (2000) and McKnight et al. (2002). Perceived risk is measured by scales from Corbitt et al. (2003) and Forsythe et al. (2006). Meanwhile, “perceived usefulness”, “perceived ease of use” in this research inherited the scales from Lin (2007). Lin’s scales were already adapted from those of Davis (1989) research to better suit online shopping context. “Compatibility” is measured by scale from Vijayasarathy (2004) where Vijayasarathy had already adapted to better suit online shopping context from the original scale of Taylor & Todd (1995). In addition to the combination of inherited scales from previous studies, in this research, the authors also developed scale of “trust” to better suit with Vietnamese research context. All variables are measured by Linkert scale from 1 to 7.

Before mass survey, the questionnaire was sent to some customers for a test run (30 people). In general, the questionnaire is well received with small alterations required in terms of wording to ensure respondent will not misunderstand questions meaning and of some questions design for the convenience of respondent.

#### 3.2. Data Collection

The research in overall consists of experience internet users that used it for online shopping in Vietnam. Questionnaires were sent directly and through the internet to research targets. There were 582 replies in which 159 were invalid and remove due to lack of information or recipients are outside of target range. Therefore, valid replies in use for analysis are 423. Research sample bears the following characteristics:

**Table 1: Characteristics of the Research Sample**

Characteristic		Frequency	Percentage
Gender	Male	169	40.0
	Female	254	60.0
	High school degree	179	42.3
Education	College school degree	57	13.5
	Bachelor degree	137	32.4
	> Bachelor degree	47	11.1
	Others	3	0.7
Average monthly income	≤ 5,000,000 Vietnam dong	265	62.6
	> 5,000,000 Vietnam dong	158	37.4
Age group (years)	18 – 25	285	67.4
	26 – 30	54	12.8
	31 – 36	46	10.9
	> 36	38	9.0

### 3.3. Data Analysis

After screening and reject unsatisfactory questionnaires' replies, the authors proceed coding and input data. Such raw data was then being processed by SPSS and the hypotheses were tested by multiple regression technique. However, we conducted scale reliability analysis and exploratory factor analysis (EFA) before multiple regression technique to test the hypotheses.

Scale reliability is tested by using Cronbach's Alpha for each of the underlying factors. The purpose of this test is to explore whether the observed variables have the same measurement for a particular measuring item. The abundant or lack of contributed value is reflected through Corrected Item – Total Correlation. Through that, it is possible to exclude unsuitable factors in the underlying research model. According to Hoang & Chu (2008), a Cronbach's Alpha ranging from 0.8 to 1 indicates a good scale, from 0.7 to 0.8 indicates that the scale is usable. In terms of Corrected Item – Total Correlation, the scale is usable when this figure is from 0.3 and up (Hair *et al.*, 2010).

EFA analysis is conducted for all observed variables with Varimax rotation and eigenvalue of greater than 1 to find out representative factors of variables. According to Hair *et al.* (2010), the requirements for EFA analysis are: (i) KMO value is within the range of 0.5 to 1; suitable to conduct EFA; (ii) Only the observed variables that has factor loading of greater than 0.3 will be kept in the model, those that resulted in a factor loading below this threshold will be eliminated; (iii) Total Variance Explained is greater than 50% and (iv) Eigenvalue greater than 1.

After scale reliability test and EFA analysis, the satisfied scales will further be analyzed by taking mean values and the control variables will be coded to conduct correlation analysis. We used Pearson (r) correlation to test the linear relationship between factors. If the correlation coefficient between dependent and independent variables are significant then they are related and linear analysis is applicable. The absolute value of r showed the strength of linear relationship. The closer such absolute value to 1, the stronger the relationship and vice versa.

After correlation analysis, we conducted multiple linear analysis with method Enter at a significant of 5% to test the proposed hypotheses, the suitability of research model and the level of impact that observed variables can have on the dependent variable. The paper inherited research methodology from previous studies and uses linear analysis instead of non-linear analysis. The linear analysis of this research being employed is the OLS method. The adjusted  $R^2$  is used to identify the suitability of the model. F analysis is used to emphasize the extension capability of this model. T analysis is used to refuse the hypotheses that the total linear analysis result is 0.

## 4. Results and Discussion

### 4.1. Scale Reliability Analysis

Reliability of scales is measured by Cronbach's Alpha. Results from Cronbach's Alpha tests are all greater than 0.8 (the lowest score belongs to Perceived Ease of Use factor with result of 0.842) and Corrected Item-Total Correlation are all greater than 0.5 (the lowest score belongs to Perceived Risk with result of 0.551) which show that applied scales satisfy reliability test. After scales reliability is tested using Cronbach's Alpha, 25 observed variables are found suitable and none were excluded from the research.

**Table 2: Result of Scale Reliability Test**

Determinants	Number of items	Cronbach's Alpha	Minimum of Corrected Item-Total Correlation
Perceived Usefulness	5	0.952	0.793
Perceived ease of use	3	0.842	0.677
Compatibility	3	0.867	0.717
Trust	4	0.860	0.556
Perceived risk	6	0.900	0.551
Attitude	4	0.899	0.735

### 4.2. Exploratory Factor Analysis

Exploratory factor analysis (EFA) for five independent variables results in KMO & Bartlett value of 0.703 within the acceptable range of 0.5 to 1. Moreover, 25 observed variables converge on 6 factors (in line with theory model) have Eigenvalue of greater than 1 and explain for approximately 76.813% of data variability. Factor converging values of observed variables are all greater than 0.5. Therefore, all variables are kept in the model.

**Table 3: Rotated Component Matrix**

	Component					
	1	2	3	4	5	6
Perceived Usefulness 1	.880					
Perceived Usefulness 2	.787					
Perceived Usefulness 3	.889					
Perceived Usefulness 4	.919					
Perceived Usefulness 5	.902					
Perceived risk 1		.659				
Perceived risk 2		.704				
Perceived risk 3		.900				
Perceived risk 4		.891				
Perceived risk 5		.867				
Perceived risk 6		.865				
Attitude 1			.790			
Attitude 2			.808			
Attitude 3			.823			
Attitude 4			.786			
Trust 1				.709		
Trust 2				.828		
Trust 3				.726		
Trust 4				.936		
Compatibility 1					.820	
Compatibility 2					.832	
Compatibility 3					.800	
Perceived ease of use 1						.706
Perceived ease of use 2						.821
Perceived ease of use 3						.805

#### 4.3. Correlations Analysis

Pearson correlation coefficient is used to analyze the relationship between quantitative variables. Correlation coefficients show that the relationships between dependent and independent variables are statistically valid. On the other hand, the size of correlation coefficients ensures nonexistence of multicollinearity phenomenon. Thus, it is possible to use other statistical approach to test the relationships between variables.

**Table 4: Correlations**

	PU	PEOU	COM	TR	PR	AT
Perceived Usefulness (PU)	1					
Perceived ease of use (PEOU)	.517**	1				
Compatibility (COM)	.325**	.381**	1			
Trust (TR)	.295**	.384**	.404**	1		
Perceived risk (PR)	.057	.062	-.129**	-.089	1	
Attitude (AT)	.453**	.411**	.503**	.449**	-.109*	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

#### 4.4. Hypotheses Testing

Regression analysis result showed 3 independent variables which are perceived usefulness, compatibility and trust. They have standardized Beta coefficients of 0.252, 0.290 and 0.216 accordingly with significance of less than 0.05. Given that, H1, H3 and H4 are supported. This means the more benefits consumer perceived they received from

online shopping the better their attitude will be towards such behaviour. Also consumer attitude towards online shopping will increase if they feel this method of shopping fits with their lifestyles. Besides, consumer attitude towards a retail website is also impacted by their trust on such web. The higher the level of trust, the better the attitude.

Meanwhile, with significance of 5%, factor of Ease of Use and Perceived Risk do not impact consumer attitude towards online shopping. Thus, H2 and H5 are not supported.

**Table 5: Regression Result of Determinants Influencing Attitude**

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
(Constant)	1.825	.265			6.885	.000		
Perceived Usefulness	.216	.039	.252	5.590	.000		.707	1.415
Perceived ease of use	.085	.043	.093	1.966	.050		.645	1.550
Compatibility	.263	.040	.290	6.621	.000		.748	1.337
Trust	.191	.038	.216	4.988	.000		.765	1.307
Perceived risk	-.061	.033	-.072	-1.873	.062		.959	1.042

a. Dependent Variable: Attitude

Based on the above results, hypotheses testing is synthesized in the Table 6, below:

**Table 6: Hypotheses Testing Results**

Hypothesis	Results
H1: Perceived usefulness has a positive impact to attitude towards online shopping.	Supported
H2: Perceived ease of use has a positive impact to consumers' attitude towards online shopping.	Not supported
H3: Compatibility has a positive impact to consumers' attitude towards online shopping.	Supported
H4: Trust has a positive impact to attitude towards online shopping.	Supported
H5: Perceived risk has a negative impact to consumers' attitude towards online shopping.	Not supported

## 5. Conclusion

The main contribution of this paper is the development of TAM by adding factors of compatibility, trust and perceived risk to serve the purpose of studying consumer attitude towards online shopping. Research results showed that consumers' attitude toward online shopping is impacted by perceived usefulness, compatibility and trust. This is in line with results from some previous studies of Hsu et al. (2014), Hernández et al. (2010), Barkhi et al. (2008), and Jarvenpaa et al. (2000). Nevertheless, this research cannot find any statistically valid relationship between perceived ease of use and perceived risk with attitude.

Therefore, in order to improve consumers' attitude with online shopping, retailers need to build trust with consumer. To build up such trust, retailers need to set up policy regarding warranty, compensation and claim for customer in a clear and user friendly way. Compensation policy for goods should have specific conditions regulation for specific situation and should clearly inform no compensation circumstances to customer beforehand. With regards to claims and complaints of customer, those should be handled quickly and reasonably in line with published policy to ensure customer satisfaction.

Beside, online retailers need to apply different payment methods to better suit various customer groups. Nowadays, some online retailing websites only accept credit or debit cards payment. Meanwhile in Vietnam, the ratio of possession and usage of such cards is still low within the community (Ministry of Industry and Trade, 2012). Therefore, in order to improve the fitness of this shopping method to a wider range of customer and through that enhance their attitude towards online shopping, retailers can apply Cash on Delivery (COD) method. With this payment method, the buyer will pay upon receipt of order goods that match what it appears online which is consistent with the habit of using cash in Vietnam (Ministry of Industry and Trade, 2015). On the other hands, this payment method also help customer reduce perceived risk of good and seller (Ha & Nguyen, 2016). This is possible because this payment method allows customer to check received goods before payment thus if the good does not hold up to sellers commitment the customer has the chance to refuse it. In short, this payment method has a dual impact on consumer attitude toward online shopping. It is not only improve the fitness level of online shopping to consumer but also reduce potential risk they may encounter when conducting their shopping online and through that enhance their positive attitude toward online shopping.

Beside the above mentioned findings, this paper contains some limitations. In the context of online shopping, risks that customer may face include financial risk, seller risk, privacy risk, security risk etc. (Pavlou, 2003). However, this paper can only discuss financial risk and product risk. This may be the underlying reason



that makes perceived risk become a factor with no influence to consumer attitude. Therefore, future research should extend to cover the impact of security, privacy risk to online shopping in order to achieve better assessment.

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